

REMARKS

Applicant has added new claim 11. Claims 1, 5 and 8-11 are currently pending in this application. The claim amendment was made in a genuine attempt to address the Examiner's concerns and to place the application in a better condition for allowance or for appeal. It is believed that this amendment does not raise new issues that would require a new search to be conducted. As such, Applicant respectfully requests that this amendment be entered.

In the Office Action, the Examiner rejected claims 1, 5 and 8 under 35 U.S.C. Section 103(a) under Mita (US 5045674) in view of Saroya (US 5554840). Applicant respectfully traverses the rejection.

As discussed in Applicant's previous responses, according to the prior art as disclosed in FIG. 15, a flexible connection cable 107 such as a flexible printed cable ("FPC") is used to connect the contacts 104 of a contacts block 105 to an IC card control circuit board (not illustrated) where the transmission of data is controlled. As the data transmission speed increases, however, the long cable distance between the IC card 102 and the IC card control circuit board starts to become problematic. When an FPC or a lead is used, the mechanism is vulnerable to noise caused between the lines (cross-talk), disturbance, etc. When the signal lines of the connection cable 107 are wired in parallel over a long distance, the cross-talk occurs as an interference between the signals at the peaks or valleys of the signals, causing errors in operation. This is particularly serious when the data transmission rate of the IC is very high.

By contrast, the present invention according to claim 1 discloses a novel contacts block module that solves the above stated problems. In accordance with the invention, a IC card control circuit board (see 7a in FIG. 1) is mounted to the contacts block 4 so as to eliminate the long cable between the IC card control circuit board and the IC contact card 2 as was previously necessary. According to the invention of claim 1, the IC card control circuit board **communicates** with the IC contact card through the contact terminals and serves as a signal transmitter that controls transmission of signals from the IC card 2 to a CPU housed in a main assembly located away from the contacts module (emphasis added) (see present specification at page 4, line 33 – page 5, line 1). The word "communicate" as used herein means there is a **two way transmission of data** between the IC contact card and the control circuit board (See specification at page 7, lines 30-34).

This important feature is recited in claim 1 as "said IC card control circuit board being operable to **communicate** with said IC card **through said contacts** of said contacts block" (emphasis added).

None of the cited references teach or suggest such a novel feature and the Office Action did not

address which reference discloses such a novel feature.

Another important feature is that the contacts block mechanism with the mounted control circuit board is a module and can be replaced as a modular unit without any change to the main assembly of the card reader unit. This can be very advantageous when card technology with respect to transmission of data, data encoding or contacts spacing changes and hardware changes are required to accommodate the new card. In the present invention, a single module housing the contacts block and the control circuit board can be changed very easily without having to take apart the main assembly to change the circuit board in order to accommodate new card technology.

The Examiner cited Saroya as teaching a contacts block mechanism (spring contact array carriage 14) of an IC contact reader. Applicant respectfully disagrees and in fact submits that Saroya teaches away from the claimed invention.

As claimed in claim 1, the entire contacts block including the contacts and the IC card control circuit board is replaceable as a module, and not just the contacts. The advantage of replacing the contacts block with the control circuit board is that upgrading of the module, e.g., due to newer technology, is very simple (see col. 8, lines 9-14 of the present specification). This feature is recited in claim 1 as “said contacts block being replaceable as a modular unit”.

By contrast, Saroya clearly states that only the contacts without the PCB (printed circuit board) are replaceable. Specifically, Saroya states that “The spring contact assembly can be fitted into a socket attached to the underside of PCB 16 in FIG. 1 and can be removed and replaced with a **new assembly** if the old one becomes **damaged**.” Thus, Saroya can only replace the contacts assembly without the circuit board and without the socket attached to the PCB. The disadvantage is that upgrading of the module apparently is not possible with just replacement of the contacts module because the PCB may need to be replaced as well (col. 8, lines 9-14). Saroya’s replacement feature addresses the problem of replacing a damaged unit while the present invention of claim 1 addresses a different problem of upgrading a working module.

Moreover, it is unclear whether the PCB as taught in Saroya contains any circuits that can “**communicate**” with the IC card as recited in claim 1. Saroya states that “The PCB includes electrical conductors and mounted circuit components analogous such boards in prior art readers.” This suggests that the circuit components on the PCB are passive circuits that simply allows data to pass between the IC card and host processor.

Additionally, it is not obvious to combine Mita with Saroya. In Saroya, an IC card is pushed past and rubs the metallic contacts. Accordingly, there is a possibility that some elements mounted on the control circuit board (PCB) may become damaged by static electricity generated between the

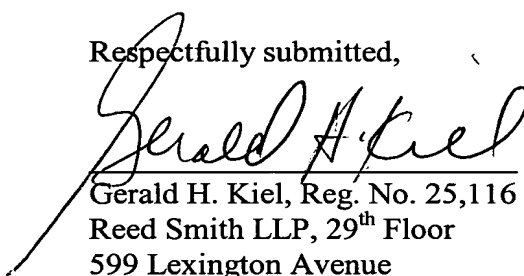
contacts and the IC card. By contrast, the claimed invention in claim 1 requires a contacts attach/detach means that move the contacts block into contact with the IC card's terminals to avoid any static electricity. Consequently, it is not possible to combine a fixed contacts assembly of Saroya with a movable contacts assembly of Mita because the combination would result in a non-working card reader.

Newly added claim 11 further recites that the IC card control circuit board "contains a control integrated circuit chip that controls communication between said IC card and a host processor." None of the cited references teach or suggest an IC chip in the control circuit board which is mounted on a contacts block.

For the similar reasons as discussed above with respect to claim 1, Applicant submits that claim 5 and 9 are also patentable. Claims 8 and 10 are also patentable by virtue of their dependency from respective parent claims.

Based upon the above amendments and remarks, applicants respectfully request reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with applicants' attorney would expedite prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,


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